

What is claimed is:

1. A deployed stent in the form of a thin-walled, multi-cellular, tubular structure having a longitudinal axis, the stent comprising:

a multiplicity of circumferential sets of strut members, each set of strut members being longitudinally separated each from the other and each set of strut members forming a closed, ring-like cylindrical portion of the stent, each set of strut members consisting of a multiplicity of strut elements, each strut element consisting of one curved section joined at a junction point to one diagonal section with each junction point being an end point of each curved section;

a multiplicity of generally longitudinally disposed sets of flexible links with each set of flexible links connecting two of the multiplicity of circumferential sets of strut members, each set of flexible links consisting of a multiplicity of individual flexible links, each individual flexible link being a single undulating structure that extends generally in the longitudinal direction that is parallel to the stent's longitudinal axis and at least one flexible link being selected from the group that includes "M" links and "W" links; and

the sets of strut members and connecting flexible links together forming a multiplicity of closed perimeter cells, at least half of all closed perimeter cells having an inside perimeter length greater than 9 mm.
2. The deployed stent of claim 1 wherein at least half of the closed perimeter cells having an inside area of less than 0.005 square inches at the designed limit of expansion for the stent.
3. The deployed stent of claim 2 wherein the shape of at least one of the individual flexible links is selected from a group that includes "N" shaped links and inverted "N" shaped links, each of said links having at least four generally longitudinal extending curved segments.

4. The deployed stent of claim 1 wherein at least half of the closed perimeter cells have an inside metal perimeter length that is less than 11 mm.

5. A stent in the form of a thin-walled, multi-cellular, tubular structure having a longitudinal axis, the stent comprising:

a multiplicity of circumferential sets of strut members, each set of strut members being longitudinally separated each from the other and each set of strut members forming a closed, ring-like cylindrical portion of the stent, each set of strut members consisting of a multiplicity of strut elements, each strut element consisting of one curved section joined at a junction point to one diagonal section; and

a multiplicity of sets of flexible links with each set of flexible links connecting two of the multiplicity of sets of strut members, each set of flexible links consisting of a multiplicity of individual flexible links, each individual flexible link being a single undulating structure that extends generally in the longitudinal direction that is parallel to the stent's longitudinal axis and each individual flexible link having two ends that are fixedly attached to an adjacent set of strut members; the shape of at least some of the flexible links being selected from a group that includes "M" links and "W" links, wherein each of said links have at least five generally longitudinally extending curved segments, each flexible link having a proximal attachment point to a curved section of one circumferential set of strut members and a distal attachment point to a curved section of a second circumferential set of strut members, each individual flexible link having a maximum circumferential extent that is approximately the same as measured from each side of a line drawn between the proximal attachment point and the distal attachment point of that individual flexible link.

6. A stent in the form of a thin-walled, multi-cellular, tubular structure having a longitudinal axis, the stent comprising a multiplicity of circumferential sets of strut members, each set of strut members being longitudinally separated each from the other and each set of strut members forming a closed, cylindrical portion of the stent, each set of strut members comprising a multiplicity of connected curved sections and diagonal sections, the sets of strut members including end sets of strut members located at each end of the stent and central sets of strut members positioned between

the end sets of strut members, the diagonal sections of the end sets of strut members having a generally greater width than the diagonal sections of the central sets of strut members so as to improve the radiopacity of the end sets of strut members as compared to the radiopacity of the central sets of strut members.

7. A stent in the form of a thin-walled, multi-cellular, tubular structure having a longitudinal axis, the stent comprising a multiplicity of circumferential sets of strut members, each set of strut members being longitudinally separated each from the other and each set of strut members forming a closed, cylindrical portion of the stent, each set of strut members comprising a multiplicity of connected curved sections and diagonal sections, the sets of strut members including end sets of strut members located at each end of the stent and central sets of strut members positioned between the end sets of strut members, the curved sections of the central sets of strut members having a generally greater width than the width of the curved sections of the end sets of strut members and the diagonal sections of the central sets of strut members having a greater length as compared to the length of the diagonal sections of the end sets of strut members so as to provide approximately matched radial strength for the central sets of strut members and the end sets of strut members.
8. The stent of claim 7 wherein the width of the curved sections of the central sets of strut members is at least 0.0005 inch greater than the width of the curved sections of the end sets of strut members.
9. The stent of claim 7 wherein the length of the diagonal sections of the central sets of strut members is at least 0.001 inch greater than the length of the diagonal sections of the end sets of strut members.
10. A stent in the form of a thin-walled, multi-cellular, tubular structure having a longitudinal axis, the stent comprising a multiplicity of circumferential sets of strut members, each set of strut members being longitudinally separated each from the other and connected each to the other by one or more longitudinally extending links, each set of strut members forming a closed, cylindrical portion of the stent, each set of strut members comprising a multiplicity of connected curved sections and diagonal sections, the sets of strut members including end sets of strut members located at each

end of the stent and central sets of strut members positioned between the end sets of strut members, the end sets of strut members having greater wall thickness than the wall thickness of the central sets of strut members so as to increase the radiopacity of the end sets of strut members.

11. A stent in the form of a thin-walled, multi-cellular, tubular structure having a longitudinal axis, the stent comprising a multiplicity of circumferential sets of strut members, each set of strut members being longitudinally separated each from the other and connected each to the other by one or more longitudinally extending links, each set of strut members forming a closed, cylindrical portion of the stent, each set of strut members comprising a multiplicity of connected curved sections and diagonal sections, the sets of strut members including end sets of strut members located at each end of the stent and central sets of strut members positioned between the end sets of strut members, each of the sets of strut members being coated with a highly radiopaque metal, the end sets of strut members having a greater wall thickness of the highly radiopaque coating as compared to a lesser thickness of the radiopaque coating on the central sets of strut members so as to have an increased radiopacity of the end sets of strut members.
12. The stent of claim 11 wherein the highly radiopaque metal is gold.
13. The stent of claim 11 wherein the highly radiopaque metal is coated with a plastic material.
14. The stent of claim 11 wherein the plastic coating is parylene.
15. A stent in the form of a thin-walled, multi-cellular, tubular structure having a longitudinal axis, the stent comprising a multiplicity of circumferential sets of strut members, each set of strut members being longitudinally separated each from the other and connected each to the other by one or more longitudinally extending links, each set of strut members forming a closed, cylindrical portion of the stent, each set of strut members comprising a multiplicity of connected curved sections and diagonal sections, the sets of strut members including end sets of strut members located at each end of the stent and central sets of strut members positioned between the end sets of

strut members, the diagonal sections of the central sets of strut members have a center and two ends, at least one of the diagonal sections of the central sets of strut members having a tapered shape wherein the width of the at least one diagonal section is different at the center of the diagonal section as compared to the width at either end of that diagonal section.

16. The stent of claim 15 wherein the width of the at least one diagonal section is less at the center of that diagonal section compared to the width at either end of that diagonal section.
17. The stent of claim 15 wherein the width of the at least one diagonal section is greater at the center of that diagonal section as compared to the width at either end of that diagonal section.
18. The stent of claim 15 wherein the diagonal sections of the end sets of strut members have a center and two ends, at least one of the diagonal sections of the end sets of strut members has a tapered shape wherein the width of the at least one diagonal section is greater at the center of the diagonal section as compared to the width at either end of that diagonal section.
19. A stent in the form of a thin-walled, multi-cellular, tubular structure having a longitudinal axis, the stent comprising a multiplicity of circumferential sets of strut members, each set of strut members being longitudinally separated each from the other and connected each to the other by one or more longitudinally extending links, each set of strut members forming a closed, cylindrical portion of the stent, each set of strut members comprising a multiplicity of connected curved sections and diagonal sections, the sets of strut members including end sets of strut members located at each end of the stent and central sets of strut members positioned between the end sets of strut members, the diagonal sections of the end sets of strut members have a center and two ends, at least one of the diagonal sections of the end sets of strut members has a tapered shape wherein the width of the at least one diagonal section is greater at the center of the diagonal section as compared to the width at either end of that diagonal section.